H0128-TW

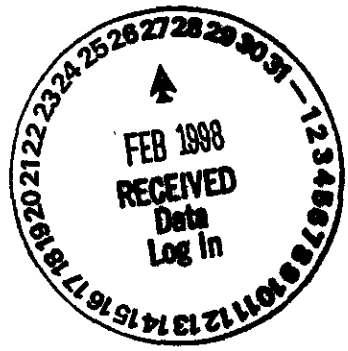
0049208

## COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

**Date:** 01-31-98
**Laboratory Batch:** 9712L930

**W.O.#:** 10958-001-001-9999-00
**Collection Dates:** 12-22-97

| SAMPLE NUMBER | LAB SAMPLE ID |
|---|---|
| BOMK29 | 9712L930-001 |





njp/930.cp

RECRA LabNet
a division of Recra Environmental, Inc.
Virtual Laboratories Everywhere

**Recra LabNet Philadelphia**
**Analytical Report**

**Client :** TNU-HANFORD
**RFW# :** 9712L930

**W.O. # :** 10985-001-001-9999-00
**Date Received:** 12-24-97

## INORGANIC CASE NARRATIVE

1. This narrative covers the analysis of 1 water sample.

2. The sample was prepared and analyzed in accordance with the method checked on the attached glossary.

3. Sample holding time as required by the method and/or contract was not met as the sample was received past hold.

4. The cooler temperature was recorded on the chain-of-custody.

5. The method blank was within method criteria.

6. The Laboratory Control Samples (LCS) were within the laboratory control limits. The duplicate LCS was within the 20% Relative Percent Difference (RPD) control limit.

7. The matrix spike recoveries were within the 75-125% control limits. The matrix spike duplicate was within the 20% RPD control limit.

8. The replicate analysis was within the 20% RPD control limit.

Bruce C Applin unit leader
for J. Michael Taylor
Vice President and Laboratory Manager
Lionville Analytical Laboratory

2-2-98
Date

njp\i12-930





206 Welsh Pool Road • Lionville, PA 19341-1333 • (610)-280-3000 • Fax (610) 280-3041

# WET CHEMISTRY METHODS GLOSSARY FOR ANALYSIS OF WATER SAMPLES

| | EPA 600 | SW846 | OTHER |
|---|---|---|---|
| Acidity | __305.1 | | |
| __Alkalinity __Bicarbonate __Carbonate | __310.1 | | |
| BOD | __405.1 | | __5210B (b) |
| Ion Chromatography: | | | |
| __Bromide __Chloride __Fluoride | __300.0 | __9056 | |
| __Nitrite __Nitrate __Phosphate | __300.0 | __9056 | |
| __Sulfate __Formate __Acetate __Oxalate | __300.0 | __9056 | |
| Chloride | __325.2 | __9251 | |
| Chlorine Residual | __330.5 (mod) | | |
| Cyanide Amenable to Chlorination | __335.2 | __9010A | |
| Cyanide (Total) | __335.2 | __9010A __9012 | __ILM04.0 (e) |
| Cyanide, Weak Acid Dissociable | | | __412 (a) __4500CN-I (b) |
| COD | __410.4 (mod) | | __5220 C (b) |
| Color | __110.2 | | |
| Corrosivity (by Coupon) | | __1110 (mod) | |
| Chromium VI | | __7196A | __3500Cr-D (b) |
| Fluoride | __340.2 | | |
| Hardness, Calcium | __215.2 | | |
| Hardness, Total | __130.2 | | |
| Iodide | | | __ASTM D19P202 (1) |
| Surfactant | __425.1 | | |
| __Nitrate-Nitrite __Nitrate __Nitrite | __353.2 | | |
| Ammonia | __350.3 | | |
| Total__Kjeldahl Nitrogen __Organic Nitrogen | __351.4 | | |
| Total __Organic __Inorganic Carbon | __415.1 | __9060 | |
| Oil and Grease | __413.1 | __9070 | |
| __pH __pH, Paper | __150.1 | __9040A __9041A | |
| Petroleum Hydrocarbons, Total Recoverable | __418.1 | | |
| Phenol | __420.1 __420.2 | __9065 __9066 | |
| __Ortho Phosphate __Total Phosphate | __365.2 | | __4500-P B __C |
| Salinity | | | __210A (a) __2520B (b) |
| Settleable Solids | __160.5 | | |
| Sulfide | __376.2 __376.1 | __9030A | |
| Reactive __Cyanide __Sulfide | | __Sec 7.3 | |
| Silica | __370.1 | | |
| Sulfite | __377.1 | | |
| Sulfate | __375.4 | __9038 | |
| Specific Conductance | __120.1 | __9050 | |
| Specific Gravity | | | __213E (a) |
| __TCLP __TCLV | | __1311 | |
| Synthetic Precipitation Leach | | __1312 | |
| Total __Dissolved __Suspended __Solids | 160__.1__.2__.3 | | |
| Total Organic Halides | __450.1 | __9020B | |
| Turbidity | __180.1 | | |
| Volatile Solids __Total __Dissolved __Suspended | __160.4 | | |
| Other:_____ | Method:_____ | | |

# METHOD REFERENCES AND DATA QUALIFIERS

## DATA QUALIFIERS

U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.

* = Indicates that the original sample result is greater than 4x the spike amount added.

## ABBREVIATIONS

MB = Method or Preparation Blank.
MS = Matrix Spike.
MSD = Matrix Spike Duplicate.
REP = Sample Replicate
LC = Laboratory Control Sample.
NC = Not calculated.

A suffix of -R, -S, or -T following these codes indicate a replicate, spike or sample duplicate analysis respectively..

## ANALYTICAL WET CHEMISTRY METHODS

1. ASTM Standard Methods.

2. USEPA Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020).

3. Test Methods for Evaluating Solid Waste (USEPA SW-846).

a. Standard Methods for the Examination of Water and Waste, 16 ed., (1989).

b. Standard Methods for the Examination of Water and Waste, 17 ed., (1983)

c. Method of Soil Analysis, Part 1, Physical and Mineralogical Methods, 2nd. Ed. (1986)

d. Method of Soil Analysis, Part 2, Chemical and Microbiological Properties, Am. Soc. Agron., Madison, WI (1965)

e. USEPA Contract Laboratory Program, Statement of Work for Inorganic Analysis.

f. Code of Federal Regulations.

Recra LabNet - Lionville

INORGANICS DATA SUMMARY REPORT 01/11/98

CLIENT: TNU-HANFORD RECRA LOT #: 9712L930

WORK ORDER: 10985-001-001-9999-00

| SAMPLE | SITE ID | ANALYTE | RESULT | UNITS | REPORTING LIMIT | DILUTION FACTOR |
|---|---|---|---|---|---|---|
| -001 | BOMK29 | Chromium VI | 0.043 | MG/L | 0.020 | 1.0 |

Recra LabNet - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD

DATE RECEIVED: 12/24/97 RFW LOT # :9712L930

| CLIENT ID /ANALYSIS | RFW # | MTX | PREP # | COLLECTION | EXTR/PREP | ANALYSIS |
|---|---|---|---|---|---|---|
| BOMK29 | | | | | | |
| CHROMIUM VI | 001 | W | 98LVI001 | 12/22/97 | 01/02/98 | 01/02/98 |
| CHROMIUM VI | 001 REP | W | 98LVI001 | 12/22/97 | 01/02/98 | 01/02/98 |
| CHROMIUM VI | 001 MS | W | 98LVI001 | 12/22/97 | 01/02/98 | 01/02/98 |
| CHROMIUM VI | 001 MSD | W | 98LVI001 | 12/22/97 | 01/02/98 | 01/02/98 |
| LAB QC: | | | | | | |
| CHROMIUM VI | MB1 | W | 98LVI001 | N/A | 01/02/98 | 01/02/98 |
| CHROMIUM VI | MB1 BS | W | 98LVI001 | N/A | 01/02/98 | 01/02/98 |
| CHROMIUM VI | MB1 BSD | W | 98LVI001 | N/A | 01/02/98 | 01/02/98 |

RECRA LabNet Use Only

9712L930

# Custody Transfer Record/Lab Work Request

RECRA LabNet

Client [redacted] - Hanover - Maryland

Est. Final Proj. Sampling Date [redacted]

Project # 10985-001-001-9999-00

Project Contact/Phone # _____

RECRA Project Manager K. C.

QC STD Del STD TAT 30DAY

Date Rec'd 12-24-97 Date Due 1-23-97

Account # _____

Refrigerator # _____

| #/Type Container | Liquid | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Solid | | | | | | | | | | | | | | | | | |
| Volume | Liquid | | | | | | | | | | | | | | | 500 | | |
| | Solid | | | | | | | | | | | | | | | | | |
| Preservatives | | | | | | | | | | | | | | | | | | |

ANALYSES REQUESTED →

| ORGANIC | | | | INORG | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| VOA | BNA | Pest/PCB | Herb | | | | | | | | | Metal | CN | Chrom. | | | | |
| | | | | | | | | | | | | | | | | | | |

RECRA LabNet Use Only

| MATRIX CODES: | Lab ID | Client ID/Description | Matrix QC Chosen (✓) MS | MSD | Matrix | Date Collected | Time Collected | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S - Soil<br>SE - Sediment<br>SO - Solid<br>SL - Sludge<br>W - Water<br>O - Oil<br>A - Air<br>DS - Drum Solids<br>DL - Drum Liquids<br>L - EP/TCLP Leachate<br>WI - Wipe<br>X - Other<br>F - Fish | 001 | BOMK29 | X | X | W | 12/24/97 | 1313 | | | | | | | | | | | | X | ICAP |

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions:

RSA - CLIENT INFO

AMSC - COMP

SDG - H0128

Cooler Temp 3.2°C

DATE/REVISIONS:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

RECRA LabNet Use Only

Samples were: 1) Shipped ✓ or Hand Delivered ___ Airbill # [redacted] 2) Ambient or Chilled 3) Received in Good Condition (Y) or N 4) Labels Indicate Properly Preserved (Y) or N 5) Received Within Holding Times (Y) or N

COC Tape was: 1) Present on Outer Package (Y) or N 2) Unbroken on Outer Package (Y) or N 3) Present on Sample (Y) or N 4) Unbroken on Sample (Y) or N

COC Record Present Upon Sample Rec't (Y) or N

Discrepancies Between Samples Lables and COC Record? Y or (N)

NOTES: *801396628322 MO 1-31-98

| Relinquished by | Received by | Date | Time |
|---|---|---|---|
| [redacted] | [redacted] | 12/24/97 | 1000 |
| | | | |

| Relinquished by | Received by | Date | Time |
|---|---|---|---|
| | | | |
| | | | |

ORIGINAL REWRITTEN

ific Northwest National Laborat

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C98-016-9 | Page 1 of 1

| | | | |
|---|---|---|---|
| **Collector** KB HULSE (RFS) | **Company Contact** JH KESSNER | **Telephone No.** (509) 372-9538 | **Project Coordinator** FORD, BH | **Data Turnaround** 45 Days |
| **Project Designation** 100KR4LAM(1) GW SAMPLING, DEC. 1997 | **Sampling Location** HANFORD SITE | | **SAF No.** C98-016 | |
| **Ice Chest No.** CL-449 | **Field Logbook No.** WM-SML-H10 | | **Method of Shipment** GOVT. VEHICLE | |
| **Shipped To** TMA/WESTON | **Offsite Property No.** | | **Bill of Lading/Air Bill No.** | |

**POSSIBLE SAMPLE HAZARDS/REMARKS**

**Special Handling and/or Storage**

**SAMPLE ANALYSIS** SDG H0128

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Preservation | None | None | | | | | | | | | | | | |
| Type of Container | G/P | P | | | | | | | | | | | | |
| No. of Container(s) | 1 | 1 | | | | | | | | | | | | |
| Volume | 20ml | 500ml | | | | | | | | | | | | |
| | Activity Scan | Chromium Hex - 7196 | | | | | | | | | | | | |
| | | (F) | | | | | | | | | | | | |
| Sample No. | Matrix * | Sample Date | Sample Time | | | | | | | | | | | |
| B0MK29 (F) | Water | 12-22-97 | 1313 | | X | | | | | | | | | |
| B0MK30 | Water | ↓ | ↓ | X | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

| CHAIN OF POSSESSION | Sign/Print Names | Date/Time |
|---|---|---|
| Relinquished By | KB HULSE (RFS) | 12-22-97 1330 |
| Received By | C-SANGKLANG | 12-23-97 1000 |
| Relinquished By | | 12-24-97 1000 |
| Received By | D. Smith | 12-24-97 1000 |
| Relinquished By | | |
| Received By | | |
| Relinquished By | | |
| Received By | | |

**SPECIAL INSTRUCTIONS**
TOTAL ACTIVITY EXEMPT

**Matrix ***

| | |
|---|---|
| S | = Soil |
| SE | = Sediment |
| SO | = Solid |
| SL | = Sludge |
| W | = Water |
| O | = Oil |
| A | = Air |
| DS | = Drum Solids |
| DL | = Drum Liquids |
| T | = Tissue |
| WI | = Wipe |
| L | = Liquid |
| V | = Vegetation |
| X | = Other |

| | | | |
|---|---|---|---|
| **LABORATORY SECTION** | Received By | Title | Date/Time |
| **FINAL SAMPLE DISPOSITION** | Disposal Method | Disposed By | Date/Time |